4.2.1 Design Principles

RFP reference: 4.2.1 Design Principles, Page 37

Requirements identified as Design Principles must be incorporated into FACTS II. Design Principles have been established to define broad system concepts and core features that are fundamental to the FACTS II.

The Delaware FACTS II design approach of common Intake, Assessments and Case Planning integrates programs within DSCYF and meets your key design requirements for a SACWIS. FACTS II design principles incorporates streamlined data entry, easy access, centralized data model reduces duplicate data entry increasing worker productivity.

Delaware FACTS II meets your key design principle of an Integrated Service Process model aimed at seamless delivery across programs to support your vision “One Child, One Family, One Plan”. The proposed Delaware FACTS II helps DSCYF administer child welfare, juvenile justice, behavioral mental health, and child care licensing programs effectively and efficiently in the state so that children, youth and families served by the public systems are safe, as well as meet state and federal policy and practice standards by integrating and enhancing the functions provided by your disparate legacy systems.

The table below highlights the principles of Delaware FACTS II and benefits of the proposed solution.

FACTS II Design Principles	Deloitte Approach Benefits DSCYF
Integrated Service Process Model	• Better administer, deliver and monitor services to clients
SOA	• Cost-effective integration of different systems • More effective integration with external partners and service providers • Speeds custom application development • Reusable, Stable and reduced risk
Rule based System	• Ease of maintenance over a period of time • Less prone to logic change failures
Centralized Data Model	• Removes data duplication and redundancy
Audit Trail	• Assist in detecting security violations, performance problems, and flaws in applications • Improve the accountability of the solution
Streamlined Data Entry	• Increases worker productivity • Reduces chances of user error
Remote Access	• Users can update the case information from remote locations • Improves consistency and sanity of data as up to date information can be maintained in the system
Structured Decision Making	• Confirms children and families get appropriate services

Table 4.2.1-1. Deloitte’s FACTS II Design Principles Features and Benefits.

Design Principles features in our transfer solution relevant to FACTS II

FACTS II Features – Design Principles	
SACWIS System Similar to FACTS II	**Deloitte Brings Direct Relevant Experience to FACTS II**
DC FACES.NET 	• Remote Access – Deloitte's first Microsoft .NET SACWIS web application over internet • Ergonomically designed with consistent look and feel and easy to use • Integrated Task Management with Calendaring, Ticklers and Alerts

Alabama FACTS 	• Supports Data Redundancy
	  ○ Automatically populates relationships when two existing clients are added to a Case
	  ○ Prepopulates data into forms and correspondence
	• Rules driven Alerts with escalation procedures

Allegheny KIDS 	• Complete integration of the Child Welfare Case Management with Enterprise systems for Client (MCI) and Provider (MPER) • Technology platform that supports Providers to download service delivery information making this single source and eliminating dual data entry

Table 4.2.1-1 Deloitte's Relevant Experience to FACTS II

Design Principles Requirements

RFP Cross Reference: Appendix E – Design Principles Requirements
3.1.1 Design Principles Requirements 1-1 to 1-32

Deloitte's proposed solution is built using design principles that include:

- Integrated Service Process Model
- SOA
- Rule based System
- Centralized data model
- Audit Trail
- Streamlined data entry
- Structured Decision Making
- Remote Access

Integrated Services Process Model

Deloitte's proposed Delaware FACTS II supports Integrated Services Process model by providing a common Intake, Investigation, Assessment, and Case planning for families and children for which services are provided by multiple agencies and ongoing Case Management capabilities to multiple agencies involved in Service Delivery. Our approach of common Intake, Investigation, Assessment and Case Planning is aligned with DSCYF's vision of "One Child, One Team, One Plan". The proposed Delaware FACTS II integrates services provided by your core agencies that include Division of Family Services (DFS), Division of Prevention and Behavioral Health Services (DPBHS), Division of Youth Rehabilitative Services (YRS), Division of Management Support Services (DMSS).

Looking at the current model, we understand that DSCYF seeks to overcome some of the key shortcomings including:

- Replicated Intake Screening, Assessment and Case Planning
- Multiple systems point of record
- Lack of coordination across inter agencies to provide services without break
- Lack of Early intervention to promote safety
- Lack of streamlined financing mechanism to provide improved services to citizens of Delaware
- Lack of individualized Case plan
- Redundant Case work and inefficient throughput of Case Workers

The figure below represents a logical overview of Delaware FACTS II Integrated Case Management System.

Components of Case Management

Intake and Screening
Gathering sufficient information about the individuals to make an initial screening
decision using the common definitions of well-being.

Assessment and Case Planning
Using assessment findings to understand the degree of intervention necessary to improve the individual's well-being to a point where it is comparable to the wider population. Develop a service plan, involving a single agency or multiple agencies as dictated by the severity of need, to close the gap between the individual and the wider population.

Ongoing Case Management
Organizing the delivery of services defined in the case plan.

Outcome Monitoring
Evaluating the outcome of services delivered and benchmarking these outcomes
against the case plan.

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Figure 4.2.1-1. Integrated Case Management with common Intake, Assessment, Individualized Case Planning and Case Management.

Delaware FACTS II provides a common intake and assessment that is followed by a common case planning stage at which planners determine a holistic set of services to be brought to bear by one or more separate agencies. Once the case plan has been assembled, individual agencies are tasked with organizing and managing the services for which they are best suited to deliver, as specified in the unified case plan. Agencies deliver services and interventions that have been defined from a common perspective and deliver them in a manner that supports the defined goals of that common perspective – an improvement in well-being as defined in the common case plan.

Integrated planning of services avoids the significant risks of ineffective intervention that arise when individual agencies are commissioned to deliver one or more services without reference to a common, detailed service plan and without the obligation to measure their results against such a plan.

Intake, Screening, Investigation and Assessment Management are critical to the Child Welfare business processes. These activities play a major role in identifying timely response that is critical for safety of the family and children with the State. The ability to record and screen Intake reports in an efficient manner directly affects the agency's response time to serve children and families in need. Access to accurate information regarding the safety conditions and risk factors are important for making critical case decisions, and furthermore it supports thorough investigations.

Integrated Services Process model offered by the proposed Delaware FACTS II helps DSCYF to better administer, deliver and monitor services to its clients which are the children, youth and their families.

SOA

Service Oriented Architecture (SOA) transforms existing data silos into the data stores. It allows utilization of existing resources, enables a secure single sign-on access to multiple systems, and improves the overall integrity of the data being captured across the spectrum. SOA layers technology design and allows the reuse of existing systems by sharing computer code between systems. They create a layer of extraction and presentation tools for pre-set data elements that allow a user to search across multiple systems and retrieve all the information related to the search criterion presented. This is a textbook fit for DSCYF which is looking for integration of services of disparate divisions' viz. DFS, DPBHS, YRS, and DMSS.

The proposed Delaware FACTS II relies on web services for its service planning and delivery activities. These activities were chosen based on our understanding and experience that they may have potential use in other agencies within a Health and Human Services department. Specifically, these web services are designed to consume information pertaining to persons or services that may be shared across agencies. FACTS II interfaces with MCI and MPI using SOA during client and provider creation to avoid duplicate entities being created into FACTS II.

The proposed Delaware FACTS II consumes services for address mapping and validation as well as for showing driving directions from the county office to the desired address. The figure that follows shows address mapping web service consumed from Delaware FACTS II.

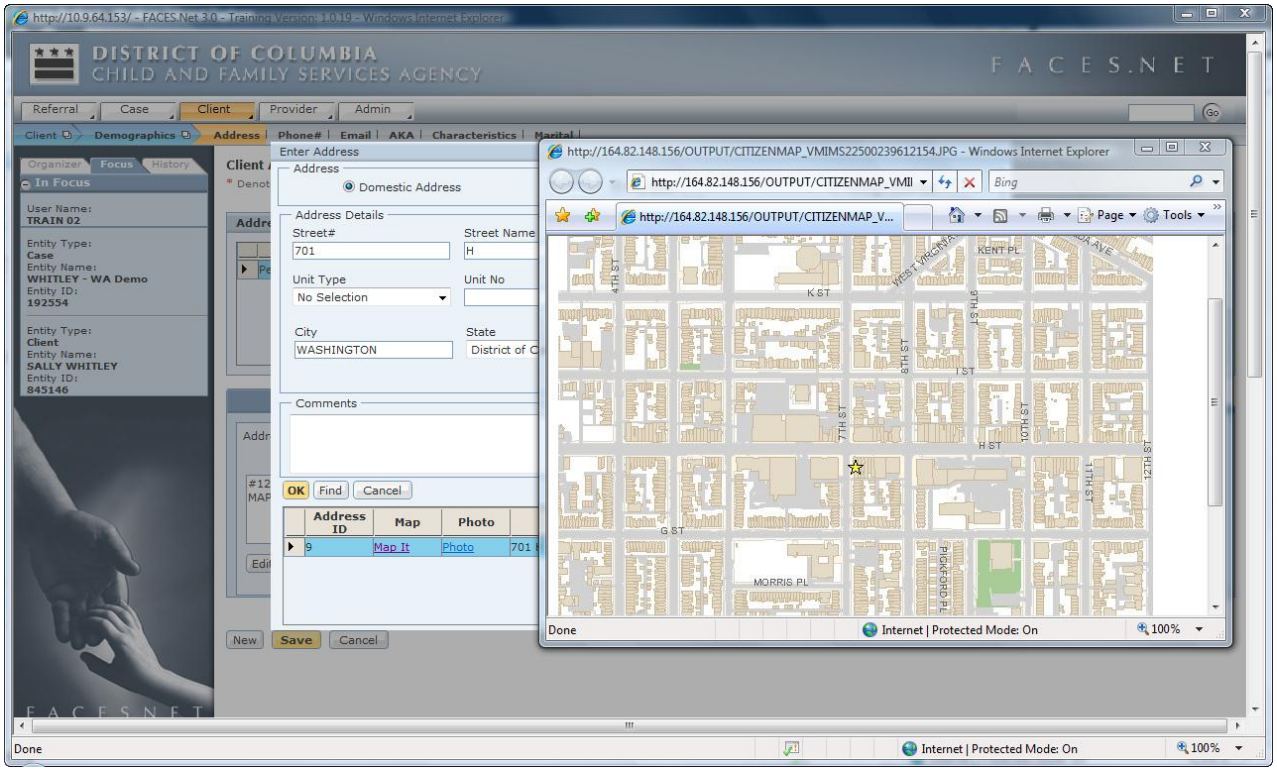

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Figure 4.2.1-2. Delaware FACTS II provides GIS and Address Validation by Integrating Web Services.

Rule Based System

It is an unfortunate but inevitable fact that the requirements of a software system are ever changing:

- Legislation changes at the national and state level
- Organizational structure changes as the agency responds to budgetary pressures and staff turnover
- Changes to child welfare best practices as innovative treatment models are tried and disseminated

FACTS II uses a rules based approach which provides flexibility to accommodate changes without extensively rewriting the code to implement the functionality to achieve desired results. FACTS does this in three main areas:

- Data driven development principals
- Rules engine
- Workflow engine

Each of these approaches tackles differing areas of configuration within the proposed Delaware FACTS II, taken together, they combine to make your system more responsive to change and less costly to modify.

Data Driven Development Principles

The proposed Delaware FACTS II includes the data driven development principles through which complex algorithm logic is simplified required to perform a business operation, reducing coding, migration and testing efforts. A good example of the use of data driven screens is within the financial cost allocation functionality. The proposed Delaware FACTS II's cost allocation functionality automatically determines the source and amount of funds for each payment made from the system. However, the algorithm for calculating this cost allocation is not fixed within the code. Instead, a revenue maximization worker can configure the cost allocation algorithm using a screen. Figure below shows Payment stamping and financial cost allocation in Delaware FACTS II.

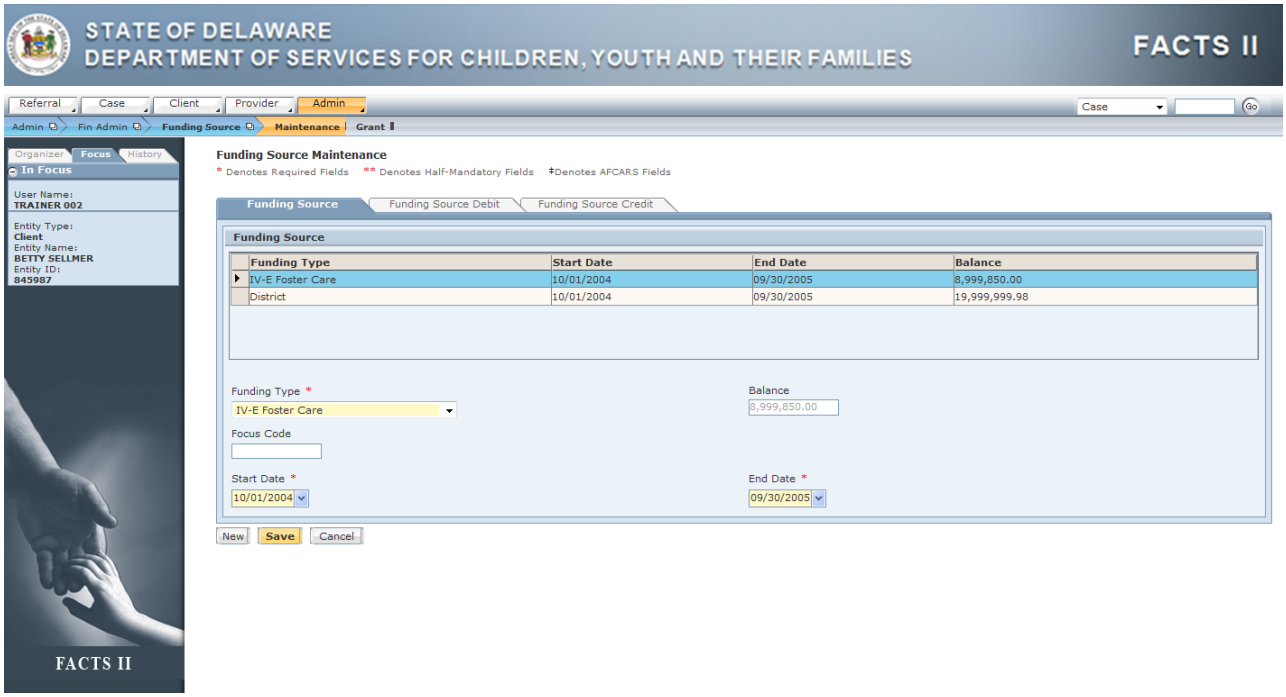

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Figure 4.2.1-3. Funding Source.

In fact, using data driven development approaches is a leading practice for systems integrators. Deloitte has employed these approaches for many years within its SACWIS systems such as DC FACES.NET and Alabama's FACTS systems. We would question the systems integration qualifications of a vendor who is system did not adhere to these types of principals. In contrast, our use of an embedded rules engine and workflow engine are not commonplace. In the next sections, we describe how and why data driven these approaches are used in the proposed Delaware FACTS II.

Rules Engine

Traditional systems development approaches embed the business rules within the application code. Any change to a business rule required a change to the underlying code – with a lot of testing, migration and deployment effort attached. We have already established that the business rules within an integrated case management system are

subject to a good deal of change as a result of evolving legislation or best practice. Just keeping up with these changes can therefore consume a great deal of your post implementation systems development budget.

Under a rules engine approach, all of those business rules are extracted from the application code and housed within a dedicated rules repository. Changing a business rule becomes a matter of changing a rule within the repository – not coding. For example, the proposed Delaware FACTS II uses its internal rules engine within its screening functionality to automatically determine whether a received intake hotline call meets the standard for abuse and neglect. We have implemented this functionality within the District of Columbia. The figure that follows shows this screen in action.

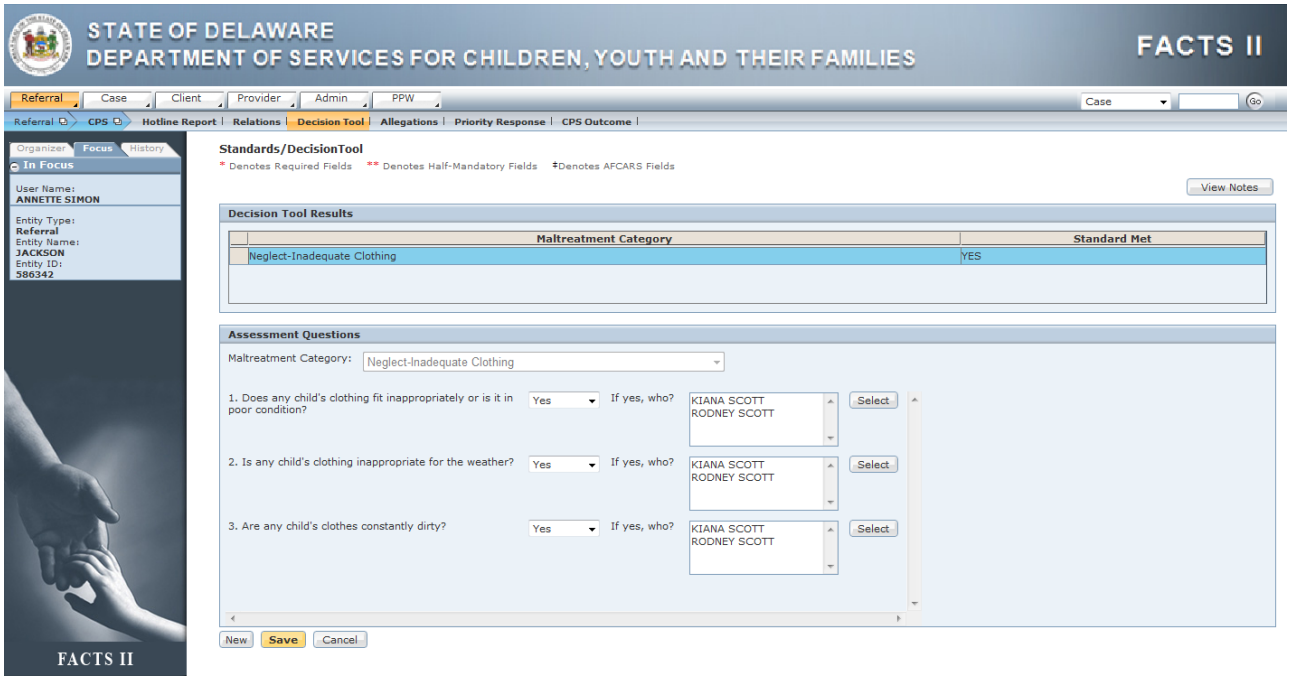

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Figure 4.2.1-4. Use of FACTS II Rules Engine in Intake Screening.

We anticipate that the standards for abuse and neglect, and the questions that need to be asked at the hotline varies from State to State and Delaware FACTS II supports changing those questions within the proposed Delaware FACTS II without any development work – simply some system configuration.

Delaware FACTS II incorporates FACTS II internal rules based Assessments implementation in the Risk/Family Assessment module. The Risk/Family Assessment Conclusion screen pictured in the figure that follows is based on a series of risk factors that were evaluated in previous screens which included assessments of the family's risk. This assessment employs a rules engine which derives outcomes based on data the worker enters in the assessment tool screens. As a result, the particular tool has been used to automatically define the Service Level, Family Assessment Result, and Family Risk Result for a worker.

Similar to the Referral Decision Tool described above, all automated results have the ability to be overridden – hence the option to override the recommended service level.

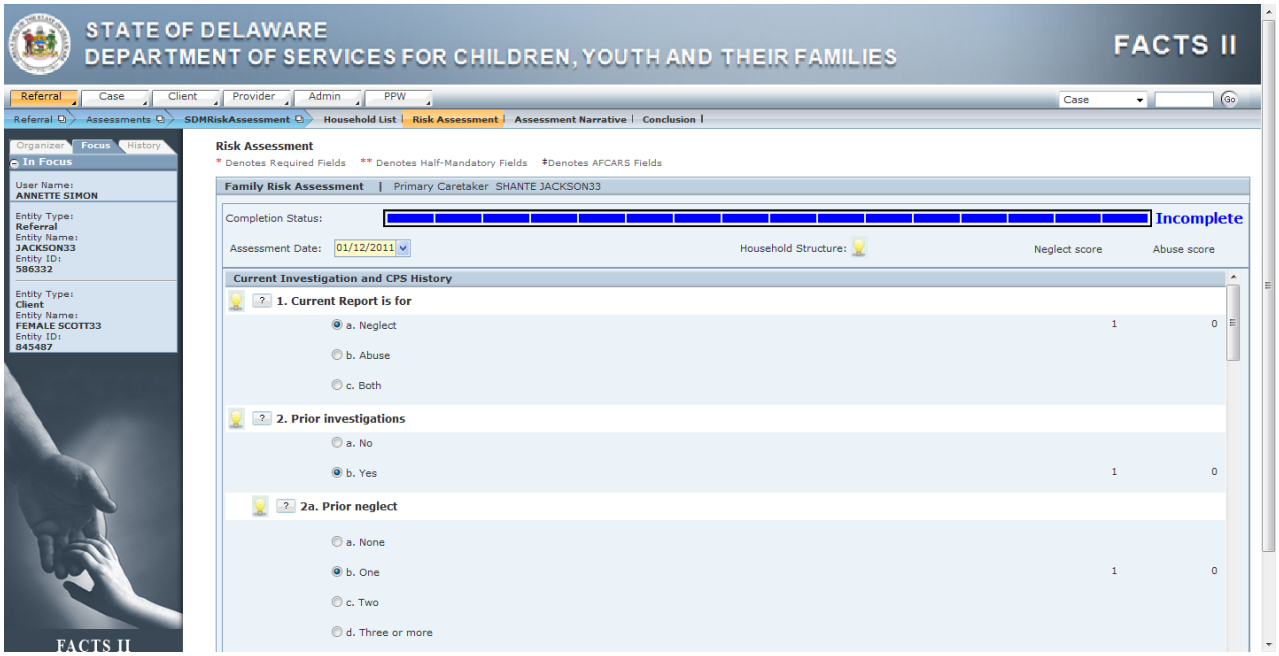

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Figure 4.2.1-5. Risk/Family Assessment Conclusion.

Our example illustrates the FACTS II internal rules based Assessments proposed in Delaware FACTS II. Assessment questions, answers and scores are maintained in our internal rules tables and is highly configurable for future refinements of proposed Delaware FACTS II. It is important to note that the development savings offered by a highly configurable system remain important long after the system is first implemented.

Workflow Engine

By using a rules engine, the definition of what a screen does can be modified without the need for expensive development work thus insulating you from much of the cost of responding to changing business requirements. By using a workflow engine, the definition of who is responsible for completing a screen can be modified without the need for expensive development work.

One of the key requirements of an integrated case management system is to manage the assignment of cases, tasks and approvals to the appropriate individuals within the child welfare organization. There are a number of unavoidable factors that complicate this management task:

- **Staff Turnover.** Social work is a difficult job. In common with many other tough professions, the personnel turnover rate is higher than desired. The system must be sufficiently flexible to respond to changes of individual staff in order to route tasks correctly.

- **Organizational Change.** Deloitte has worked with a number of child welfare and family preservation agencies over a sufficiently long time frame that we have come to accept and understand the desire of incoming executives to modify the organizational structure of the agency. Changes to the organizational structure must also be quickly reflected within the solution if tasks are to be routed correctly.
- **Responsibility Change.** This can occur in tandem with, or separate to, organizational change and involves the transfer of responsibilities for a task, or set of tasks, from one organizational unit to another.

The proposed Delaware FACTS II uses Microsoft Windows Workflow Foundation (WWF) copes with each of these situations. The figure below illustrates how simple the construction of a proposed Delaware FACTS II workflow can be.

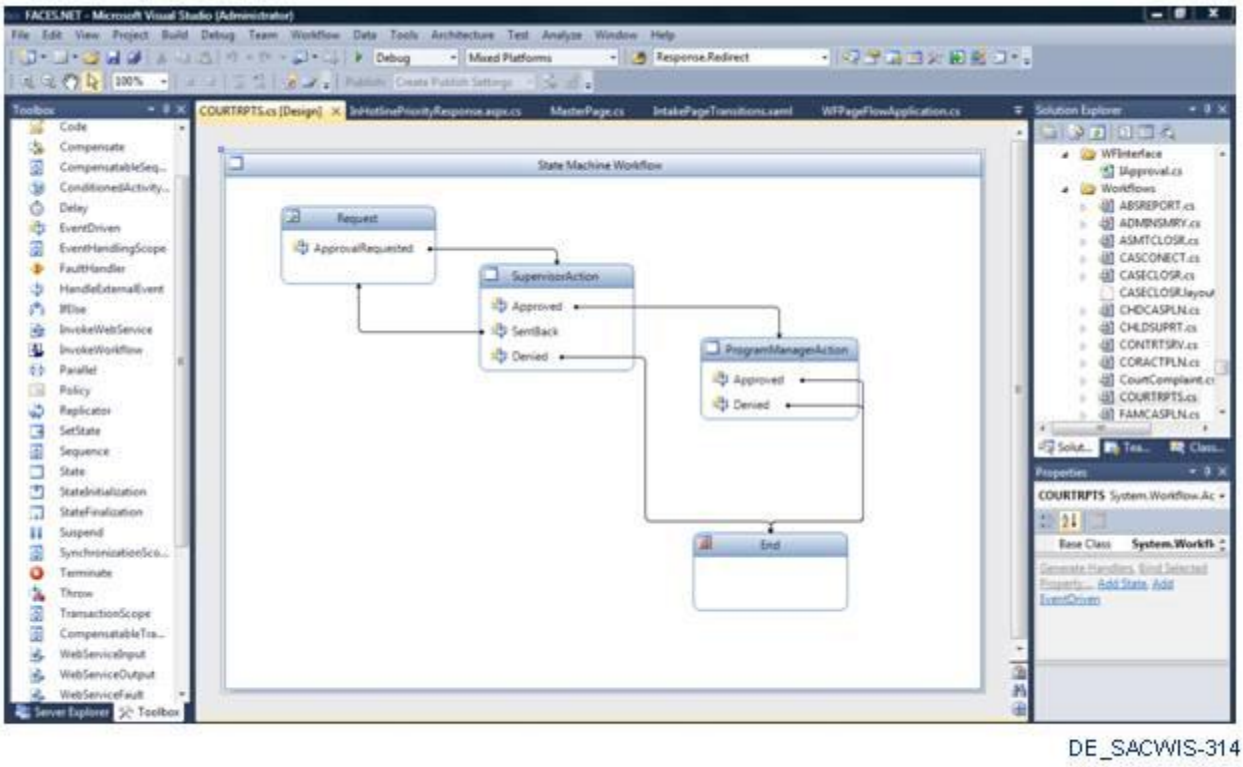

Figure 4.2.1-6. Windows Workflow Designer.

Our example illustrates the review and approval workflow for case closure. The supervisory reviewer has the option of approving closure, denying it, or sending the request back for further justification. From this proposed Delaware FACTS II screen it is possible to make the following changes to the workflow, without involving a programmer:

- **Changing the Routing of the Approval Request.** For case closure, we typically route the request to the direct supervisor of the requesting worker. Our workflow engine supports can route requests to named individuals, supervisors within other units and even supports different approval paths depending upon the county in which the request is made. Each of these changes can be made within the proposed Delaware FACTS II workflow designer screen.
- **Changing the Number of Reviewers.** For case closure, we can either implement the single approval of the direct supervisor, or other options are configurable as follows:
  - Approval chains, in which approval from one supervisor automatically triggers an approval request to a further individual
  - Approval pools, in which any one of a group of reviewers can make the approval
  - Approval blocks, in which all of a group of reviewers must grant approval
- **Changing How Tasks are Routed if the Primary Approver is on Vacation.** Our workflow engine can handle backup approval pathways.
- **Escalation of an Approval Request if it Remains Unactioned.** Our workflow engine can be configured to determine how long an individual has to address each task before it is considered overdue. It can also be configured to alert supervisory or managerial staff when a task remains unactioned for too long.
- **Notification Methods.** By default, all tasks are routed to the proposed Delaware FACTS II inbox screen. Our workflow engine can also alert users to the presence of new tasks via email or Blackberry.

We hope that you can see from this description that our proposed Delaware FACTS II offers a tremendous amount of power and flexibility that dramatically reduce your long term cost of ownership through streamlining of development costs.

However, this is not the only benefit of a workflow engine. The other major benefit is accountability. The proposed Delaware FACTS II workflow engine maintains a detailed audit trail of every task that passes through it. At any point in time you can see:

- The status of an individual task
- The date and time when that task was assigned to its present holder
- The dates and times when that task was transferred between all previous holders
- The number of overdue tasks, the degree to which they are overdue and the individuals responsible for completing them

In addition to promoting swift, appropriate decision making, we also must recognize that there are times within a child welfare agency when events within a family do not progress as planned. When unfortunate events do arise, it is extremely helpful to be able to piece together the exact chain of events that led up to that occurrence.

Structured Decision Making

Structured decision-making is an approach to child protective services that uses clearly defined and consistently applied decision-making criteria for screening for investigation, determining response priority, identifying immediate threatened harm, and estimating the risk of future abuse and neglect. Child and family needs and strengths are identified and considered in developing and monitoring progress toward a case plan.

The proposed Delaware FACTS II contains a standardized risk assessment tool for screening hotline calls in order to better focus their resources by helping caseworkers quickly assess the urgency of the case and whether or not a referral to a community agency would meet the family's needs. Figures 4.2.1-7 to Figure 4.2.1-9 depict series of assessment screens from the Delaware FACTS II Investigation module.

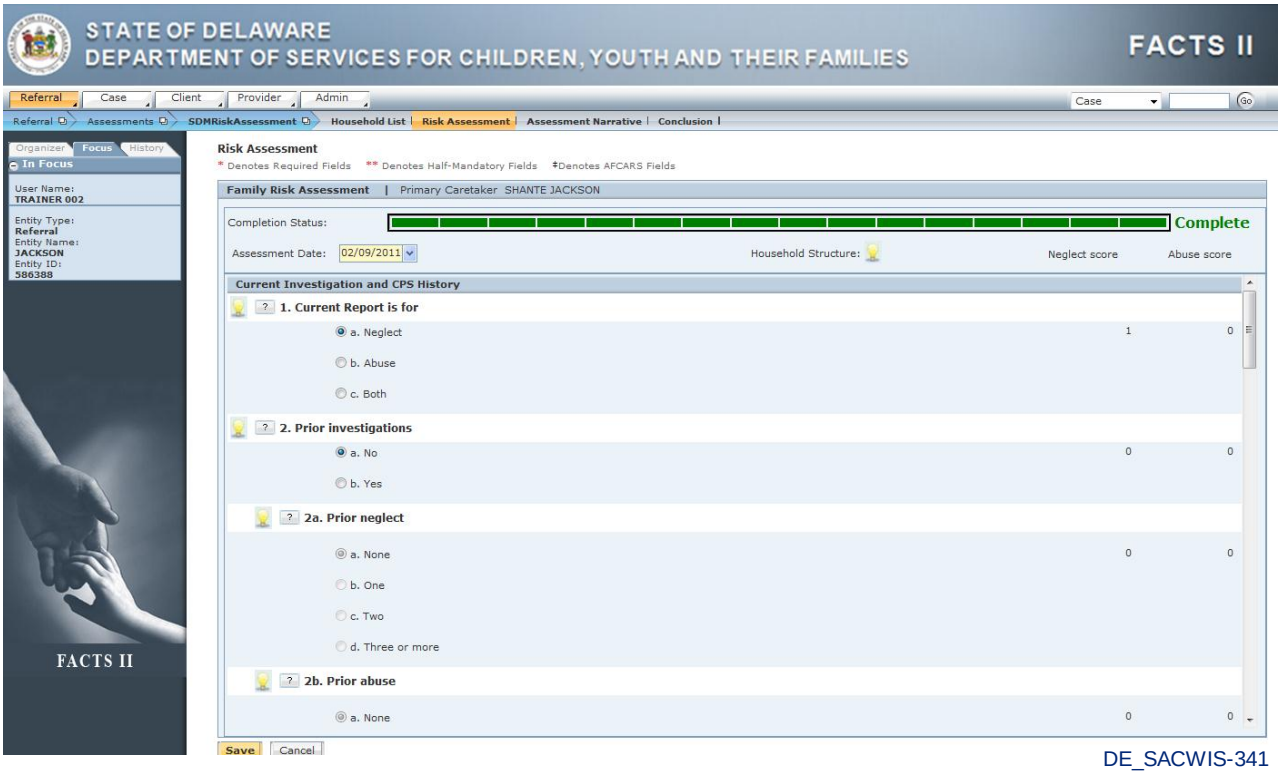

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Figure 4.2.1-7. Family Risk Details.

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Figure 4.2.1-8. Risk Assessment Narrative.

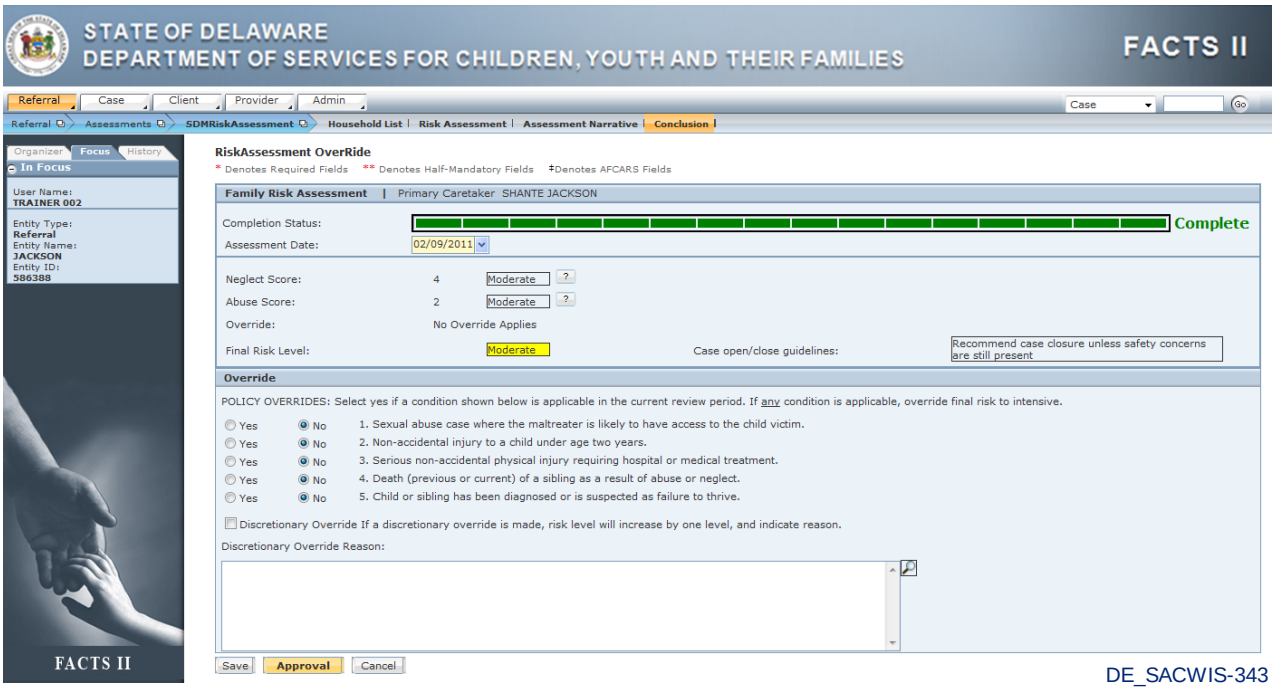

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Figure 4.2.1-9. Risk Assessment Conclusion.

The tool prompts caseworkers to ask each caller a series of structured questions to identify the level of risk to the child's safety and the appropriate intervention based on certain risk factors, such as number of prior investigations, number of children involved, and whether or not the parent has a criminal history or a history of drug use. Cases are ranked based on these factors and designated as high, moderate, or low risk. The District of Columbia's CFSA, where this system is running, retains these cases and assigns them to a CFSA investigator. For those cases assessed to be of low or moderate risk, children and their families are to be referred to one of CFSA's community partners for intervention and support services, including housing and employment information, parenting workshops, and referrals to other services.

Centralized Data Model

Deloitte recognizes that a centralized data model provides a single source of data offering a high degree of control and efficiency. The proposed Delaware FACTS II uses centralized data model to store data from the different divisions' viz. DFS, DPBHS, YRS, and DMSS into a central database through Data Conversion. A centralized database avoids data duplication and redundancies, since all information required by the different divisions of DSCYF resides in a single database.

The data model employed in the proposed Delaware FACTS II is time tested and has gone through multiple review cycles and has been fine tuned in different states where Deloitte has implemented this solution. It is a normalized data model with a well defined data dictionary that has been proven to support converted data from a host of legacy systems in multiple states where the solution has been transferred. The data model can support large volumes of data including documents for easy search and retrieval. The figure that follows depicts our centralized data model.

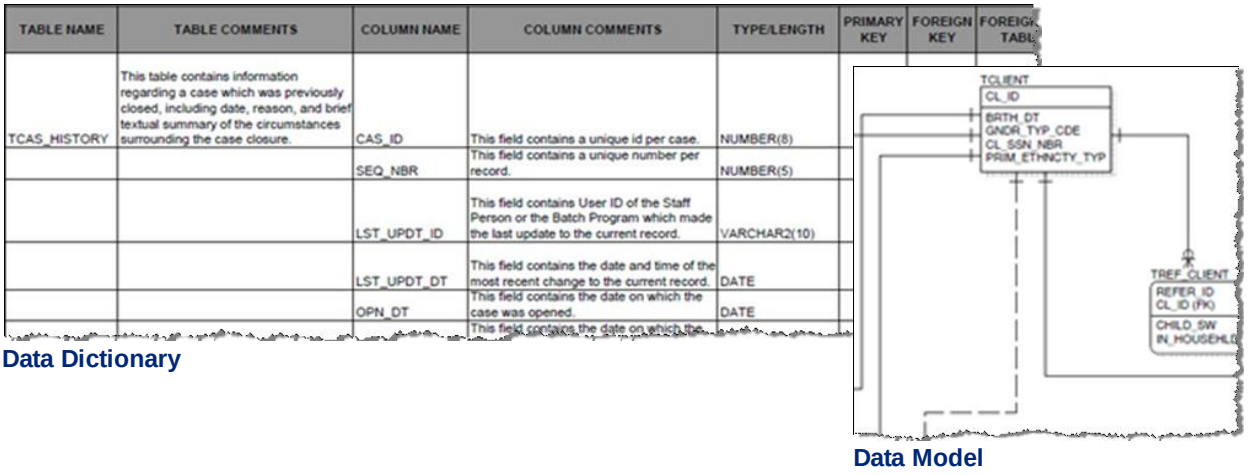
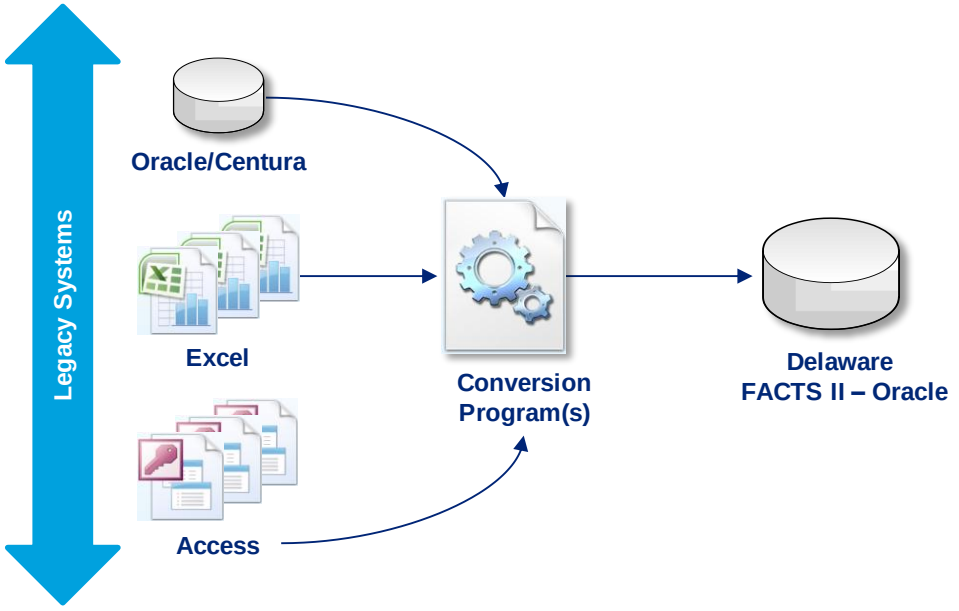


TABLE NAME	TABLE COMMENTS	COLUMN NAME	COLUMN COMMENTS	TYPE/LENGTH	PRIMARY KEY	FOREIGN KEY	FOREIGN TABL
TCAS_HISTORY	This table contains information regarding a case which was previously closed, including date, reason, and brief textual summary of the circumstances surrounding the case closure.	CAS_ID	This field contains a unique id per case.	NUMBER(8)			
		SEQ_NBR	This field contains a unique number per record.	NUMBER(5)			
		LST_UPDT_ID	This field contains User ID of the Staff Person or the Batch Program which made the last update to the current record.	VARCHAR2(10)			
		LST_UPDT_DT	This field contains the date and time of the most recent change to the current record.	DATE			
		OPN_DT	This field contains the date on which the case was opened.	DATE			
			This field contains the date on which the				



DE_SACWIS-195_2

Figure 4.2.1-10. FACTS II Centralized Data Model for All Programs within DSCYF.

Audit Trail

The proposed Delaware FACTS II's audit trail functionality offers two distinct approaches to the capture of an audit trail – tracking of record views and tracking of changes. It tracks user access to case and client information, even when no information is changed. Each time a record is accessed, the solution records the date and time of access, the user responsible, and the screen used to access the information. This functionality is illustrated in the figure that follows.

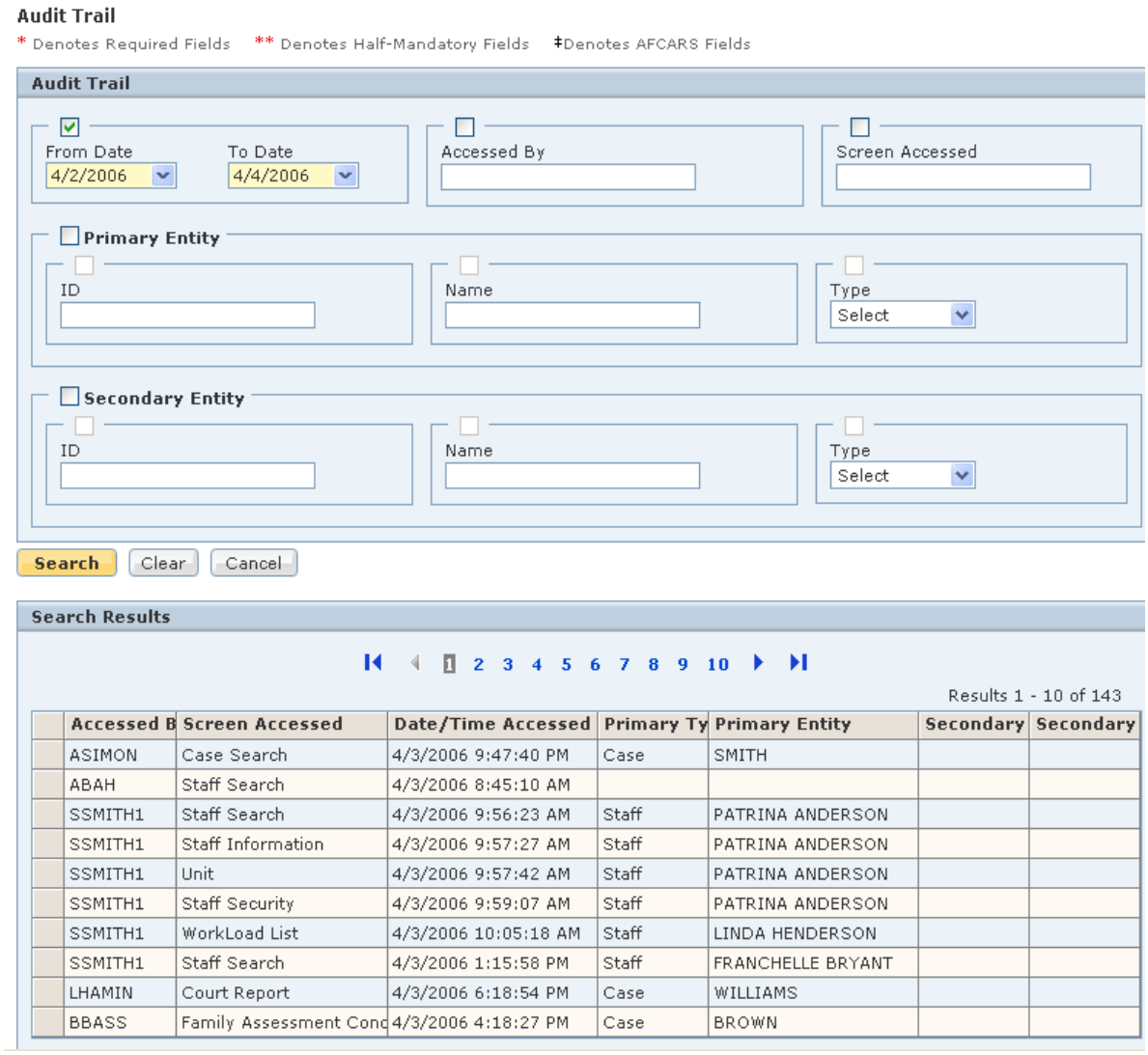


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Figure 4.2.1-11. Record View Audit Trail.

When information on a record is added or changed, Delaware FACTS II additionally records a snapshot of the data before the change and a snapshot of the data after the change.

The Delaware FACTS II audit trail functionality offers functionality to support your staff in the following important circumstances:

- Tracking inappropriate access to case records
- Tracking changes made to client information that have an impact upon Title IV-E eligibility and federal claiming
- When an unexpected or unfortunate case vent occurs, being able to assemble a complete history of who has touched a case, under what circumstances and what information was recorded

The audit trail functionality of the proposed Delaware FACTS II being loosely coupled with the rest of the solution, can be easily extended as per DSCYF's requirements.

Streamlined Data Entry

Deloitte understands that it is not only important to design a system that meets all your requirements but it is also equally important that the system be user friendly, intuitive to users and use streamlined data entry procedures. In order to achieve that Deloitte uses its best practices and industry standards to develop the system that includes:

- **No Duplicate Data Entry.** Deloitte understands it is critical to provide a system that increases workers throughput and efficiency. The proposed Delaware FACTS II is designed to achieve this and we have designed our system in such a way that data is shared across modules a simple example a client created in Intake is available in Investigation, Case, Provider or an assessment available across modules investigation and Case etc. Our data model behind the application prevents duplicate entry to be saved.
- **Consistent Look and Feel.** We have hands-on experience from previous systems developments for the states of Alabama, Maryland and the District of Columbia. This user interface adheres to the standards related to the creation of banners, logos, symbols, and layouts. Particularly, the graphical user interface (GUI) is compliant with the Americans with Disabilities Act (ADA) and designed for individuals of varying backgrounds, languages, and skill levels. We provide standardized templates through the uses of proven technologies such as cascading style sheets (CSS) to implement standard templates, images, colors and buttons.
- **Presentation Components.** Includes a set of reusable custom developed tag libraries. Custom tag libraries range from simple button tag to AJAX enabled widgets that do not require a page reload and are able to asynchronously communicate with a server.
- **Pagination and Sorting.** We understand that it is very important to present the data in a readable manner; on pages when you have to present large collection of data set pagination is used which allows users to easily navigate through information. Our solution also provides sorting option to users so that they can view data in a manner they are comfortable with.
- **Help Management.** Provides direct links to the policy and application documentation applicable to the screen the user is viewing. Also supports both page and field level online Help functionality and links to an Intranet-based discussion boards.
- **Power Data Entry tools.** The proposed Delaware FACTS II is designed with power data entry tools that includes dropdown, multi-selects, fast-adds which allows user to select data in a rapid fashion and avoid redundant data entry
- **Logically Arranged.** The proposed Delaware FACTS II's menu layout and screen design adhere to the business workflows of the users. They mimic the real life workflows. The layout is similar to a wizard yet allows the flexibility to jump steps for experienced users.

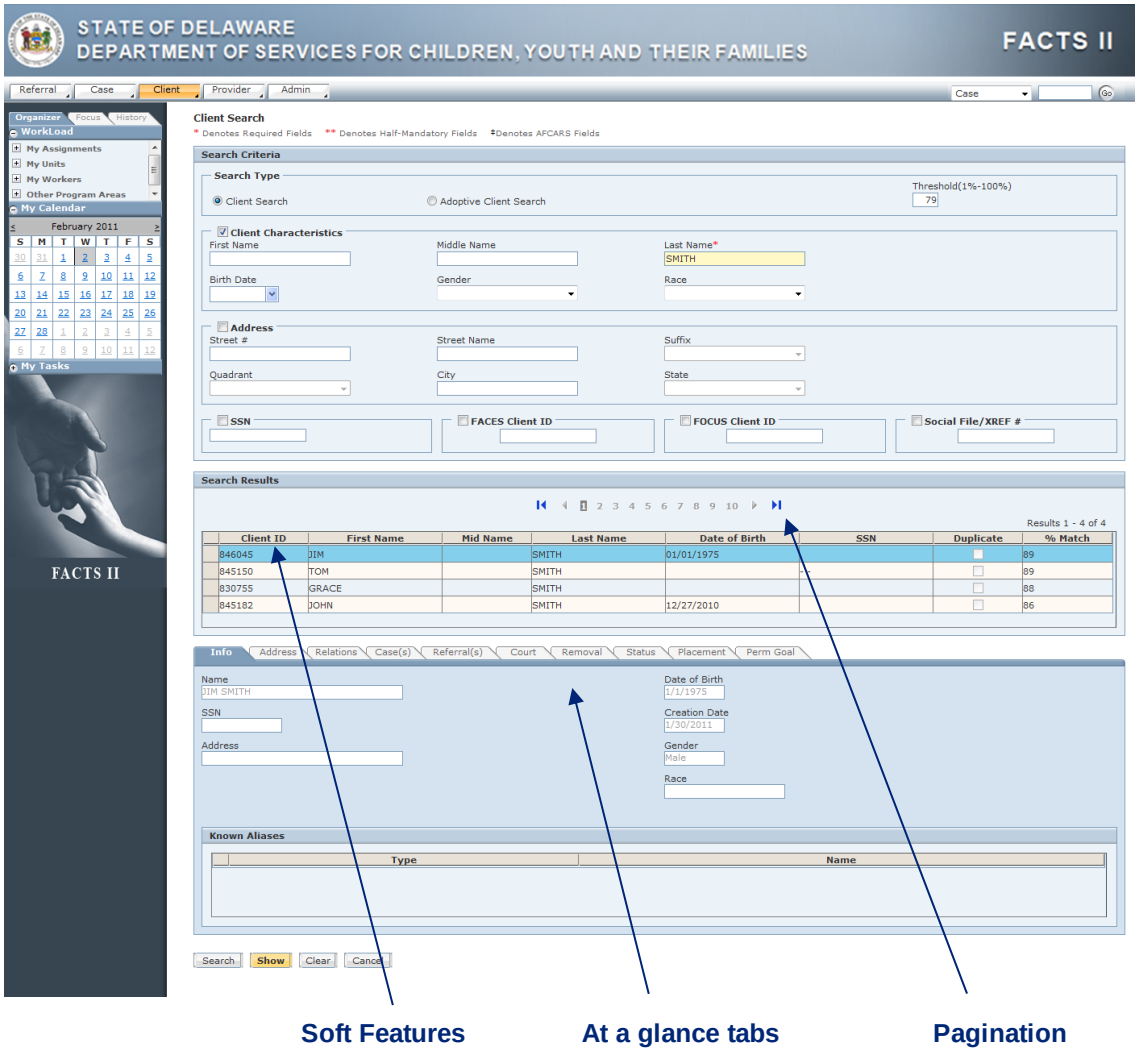

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Figure 4.2.1-12. Ergonomically Designed and Intuitive to use with Pagination and Sorting.

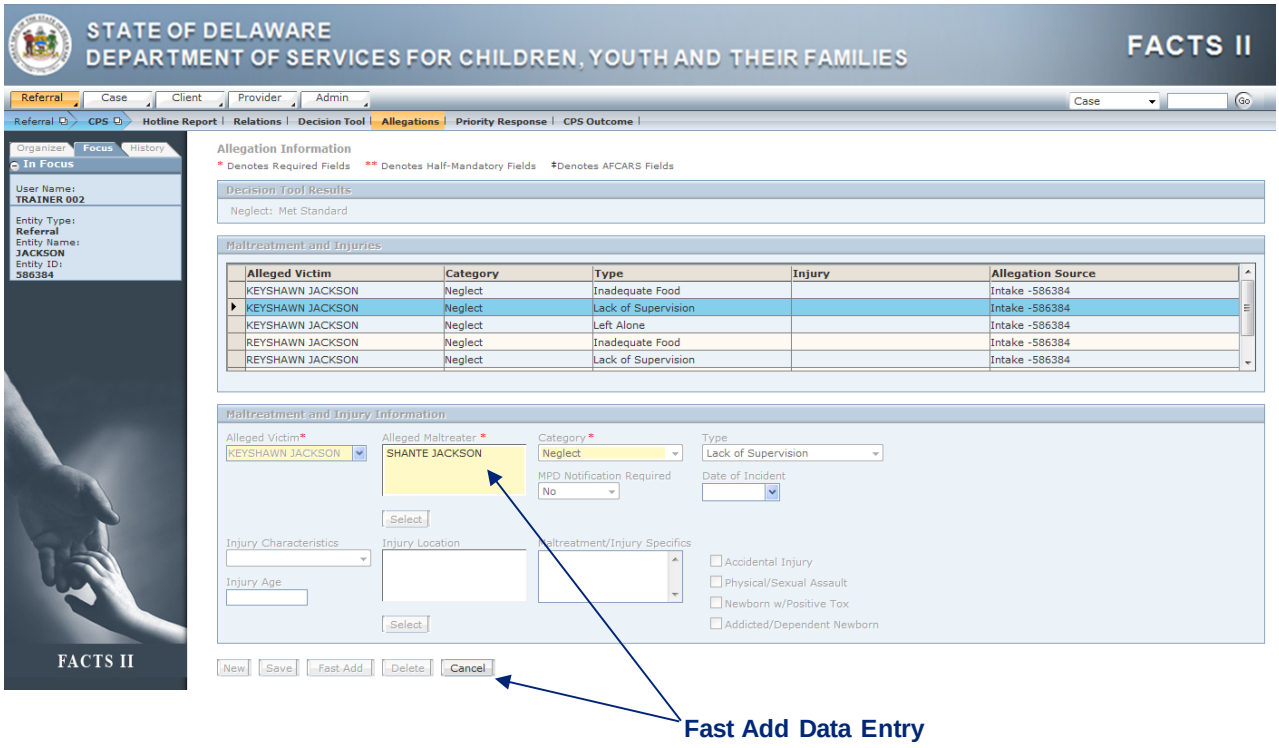

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Figure 4.2.1-13. Power Data Entry Tools Facilitates Easy Data Entry for Workers.

Remote Access

Deloitte's proposed Delaware FACTS II is a Web-based solution hence any worker having an Internet connection and valid login credentials can access the solution remotely. Remote Staff signs into state VPN account prior to accessing the proposed Delaware FACTS II. The login credentials that staff uses to access the network is same as the login/password that they use to login to the state network. The proposed Delaware FACTS II's authentication functionality as displayed in the figure that follows uses the Lightweight Directory Access Protocol (LDAP) repository for authenticating users.

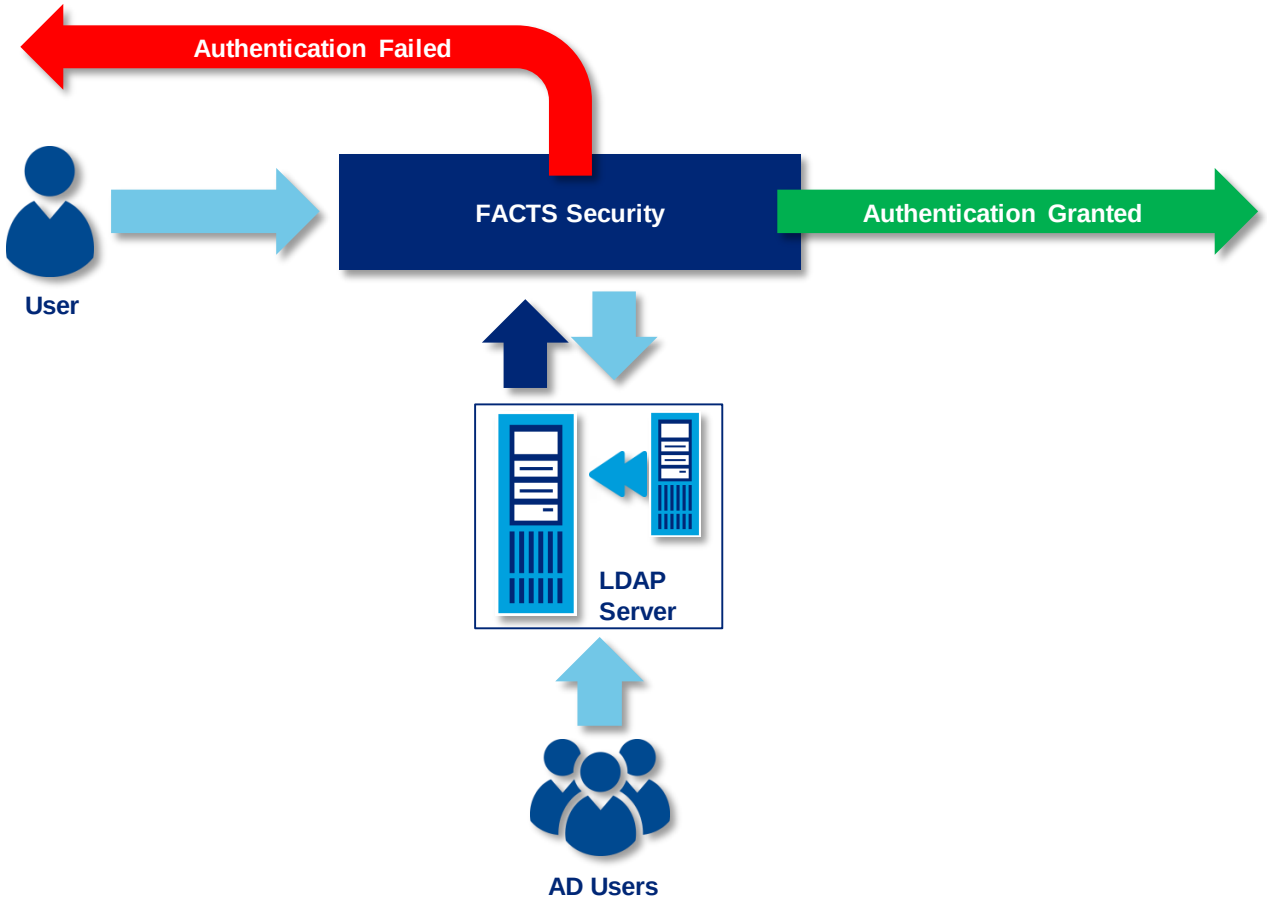

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Figure 4.2.1-13. Facts Authentication.

Deloitte understands that the focus of network segmentation is to classify, configure and protect network assets including hardware, system software and data storage systems using software and hardware based firewalls. This allows for containing network broadcasts and protecting infrastructure from external attacks that can potentially lead to a data security breach. The proposed Delaware FACTS II is based on your existing zone based network segments to align with your security and network policies.